REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested. This Amendment should be entered under Rule 116 because it places this application in condition for allowance.

Claim amendments/Status

In this response, the spelling of the term 'impassible' has been corrected where appropriate. These amendments are seen as overcoming the objections raised in paragraph #3 of this Office Action. No new matter is introduce and no new issues are raised.

Claims 1-14 remain pending in the application.

Drawings

A new figure 14 has been added in this response to illustrate the steps that are recited in claim 1. This new drawing overcomes the objection raised in paragraph #2 of this Office Action.

Rejections under 35 USC 112

The rejection of claims 1-2, 6-7, and 10-14 are rejected under 35 USC 112, first paragraph, as failing to comply with the enablement requirement. This is respectfully traversed in that the addition of an additional object is clearly disclosed on page 2, lines 11-26, and the remaining sections of the specification make it clear as to the mathematics which are involved in the shape and arrangement of the additional object. In that it is added in addition to real objects renders it not "real" and therefore supports the use of the term "virtual." Arbitrarily introducing additional object data into that representing real obstacles is well within the grasp of the person of skill in this type of computational art.

The question raised in this rejection as to "how does something [that does] not really exist be determined" can be readily answered – just arbitrarily add data which represents the same. The world of virtual reality is everywhere these days. All that is necessary is to take data representing a real situation and add more to embellish/modify the situation.

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As to the assertion that "the near neighborhood of the craft could be in front, rear, or sides of the craft" - this is quite correct, and it would depend on the maneuver that is being contemplated. As pointed out on page 2 lines 4-9 of the instant application, the goal of the present invention is to ensure that the estimations of curvilinear distance, obtained are coherent and realistic by prohibiting them from being measured over routes that cannot be reached by the craft navigating the terrain since this requires maneuvers exceeding its capabilities. In a nutshell, the embodiments of the invention place a virtual object in or adjacent the path (for example) of the turn or whatever maneuver is called for, and therefore be such as to force the navigation system to determine a flight path based on the totality of data and which is such as obviate a maneuver that is beyond the capabilities of the craft.

The specification further discloses that:

> The subject of the invention is a method for estimating curvilinear distance within a region where a craft with limited maneuverability is traveling and which contains potential obstacles to be circumvented, which region is referred to as travel region, in which a map of distances is established covering the travel region and having an origin of the distance measurements close to the instantaneous position of the craft, characterized in that it consists, when the distance map is established, in completing the potential obstacles to be circumvented by an additional obstacle to be circumvented which is associated with the craft and placed in its neighborhood, and which encompasses areas of the near neighborhood of the craft considered to be inaccessible to the craft owing to its maneuverability limits. (Emphasis added)

The Examiner's position with respect to the claimed subject matter is deemed to provide the applicant with a solid non-obvious position. That is to say, even the Examiner cannot immediately envisage the elegant simplicity of the solution provided to craft navigation by the arbitrary addition of a virtual or addition object, which when added in the mix with the real objects, is such as to provide appropriate navigation which avoids the craft undergoing a

maneuver which is beyond its design capabilities, or subjecting the passengers/pilot or aircraft structure to excessive G-forces or the like in the event that the craft is an aircraft.

Claims Rejections-35 USC 103

The rejections of:

1)   claims 1-2, 6-7, and 10, under 35 USC 103(a) as being unpatentable over Saban et al. in view of Kimmel et al.; and

2)   claims 11-14 under 35 USC 103(a) as being unpatentable over Saban et al. in view of Kimmel et al. as applied in claim 1 above, and further in view of Kameda et al.; are respectively traversed.

The Saban et al. reference does not disclose arbitrarily introducing a virtual object into the information used for airborne obstacle collision avoidance. While the movements of impassible objects such as another aircraft are taken into consideration, the predicted movement of the objects are not those of arbitrarily introduced "virtual" or 'unreal' objects, they pertain to real objects (as different from objects which are not real and which have been arbitrarily added) and if you cannot determine where they are apt to go, and you were unable to avoid same and were such as to hit one, death and destruction would inevitably follow.

In connection with the last of the claimed steps of plotting a course which prohibits unrealistic vehicle turns based on the paths that are out of range of the vehicle owing to its limited maneuverability, the rejection cites column 12, lines 44-65, of Saban et al. However, this section of this reference discloses:

> FIG. 18 illustrates an example of how an **escape path** is generated by generator 161 and displayed in the aircraft display 142. In FIG. 18, the current velocity and heading of the aircraft is represented by the vector V. The collision point C_P lies on the line defined by the vector V at a range which takes into account the response time of the pilot and measurement errors; that is, the response time multiplied by V is less than the range to the cable, i.e., OC_P. The

orientation of the cable with respect to the heading direction of the aircraft is indicated as β.R_F is the safety distance between the aircraft and the cable at the actual velocity V. The **escape path** (EP) **computed by the obstacle map generator 161** (FIG. 17) is indicated as EP and is tangent to the velocity vector V at the current position. It is also tangent to a line parallel to the cable at distance R_F from it at a point P on its trajectory further than the point Q of intersection between the line perpendicular to the cable at C_P and the trajectory. The obstacle is placed at such a distance to enable the aircraft to move on a given trajectory EP at **maximum acceleration and velocity**. The alarm decision system 12 is designed such that t_{min} and R_{min} stand for the previous condition. (Emphasis added)

It is submitted that the claimed feature is not disclosed *supra.* While an obstacle map generator 161 is disclosed along with the generation of an escape path, there is no disclosure of data pertaining to an arbitrary non-existent (viz., virtual) object being introduced thereinto to modify the escape path.

Without this disclosure in Saban et al. it is submitted that none of the above-mentioned rejections can be deemed tenable. That is to say, neither Kimmel et al. nor Kameda et al. provide any teachings which compensate for this shortcoming and enable a *prima facie* case of obviousness to be established.
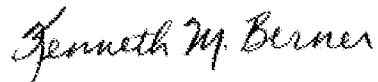
Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the application is in condition for allowance and a Notice to that effect is earnestly solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this

paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
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